

## Product Information VMU-2

## CONTROLS

# Temperature Controller VMU-2

## Application / specified usage

- The temperature controller VMU-2 converts the signal from a Pt100 or Pt1000 into a linearized standard signal 0...10 V or 0/4...20 mA, proportional to the temperature.

## Labeling



## Features

- Menu guidance using LC display
- Freely selectable measuring range
- Selectable analog output
- 0...10 V or 0/4...20 mA
- Pt100 or Pt1000 can be connected
- 3 or 4-wire-technology
- Sensor monitoring
- Display of the actual value in either °C or °F, as selected
- Connection via pluggable terminal blocks
- Narrow design (22.5mm)
- Universal power supply 24/20...255 V AC/DC

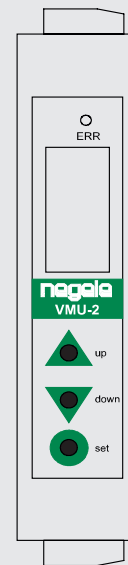
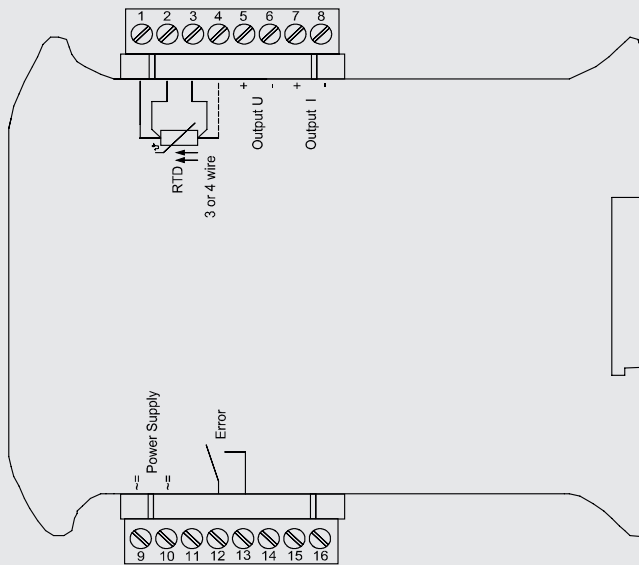
## Temperature Controller VMU-2



## Technical data

<b>Housing</b>	acc. to DIN norm dimensions	made of ABS for rail mounting acc. to EN 50022 22.5 x 111 x 120 mm (W x H x D)
<b>Protection class</b>		IP20
<b>Ambient</b>	storage temperature operating temperature humidity	-10...+55 °C 0...+55 °C 0...95 %, no bedewing
<b>Terminals</b>		2.5 mm <sup>2</sup> , Screw-type terminals pluggable
<b>Input</b>		Pt100 / Pt1000, 3 or 4 wire
<b>Measurement range</b>	range adjustable lowest span	-200...+850 °C / -328...+1562 °F 50 °C / 122 °F
<b>Output</b>	voltage current error message	0...10 V / Load ≥ 1 kΩ 0 / 4...20 mA / Burden ≤ 500 Ω max 250 V / 3 A AC Changeover contact
<b>Linearity error</b>		≤ ±0.1 % from measurement range
<b>Temperature drift</b>		≤ 0.01 % / K
<b>Display resolution</b>		0.1 °C / °F
<b>Step response 0...99 %</b>		< 250 ms
<b>Power supply</b>	AC DC	24...255 V, 48...62 Hz 20...255 V
<b>Power consumption</b>		2.5 W / 4.5 VA
<b>Sensor current</b>		500 μA
<b>Wire compensation</b>		max 100 Ω
<b>Weight</b>		148 g

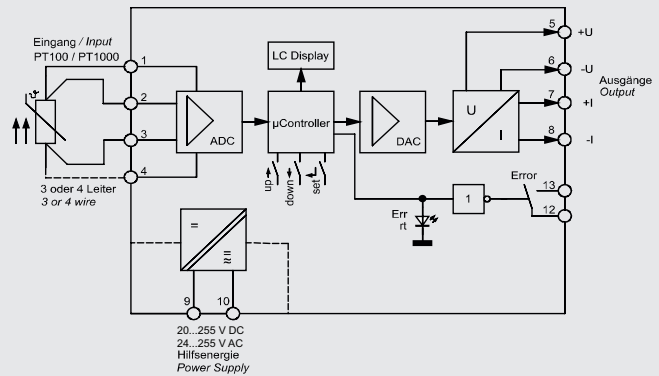
Side- and front view



Adjustment

1. Actuate the "set" button for at least 5 s. The text "press set 5 s for setup" appears. The unit then switches to "SET" mode.
2. Use the "up" and "down" buttons to select the desired parameter.
3. Actuate the "set" button. The unit switches into the setup mode for the selected parameter.
4. Use the "up" and "down" buttons to select the desired value.
5. If the desired value is set, confirm it using the "set" button. The unit switches to the main menu.
6. Repeat points 2 to 5 with all other parameters that are to be changed (see menu listing).
7. Select the menu point "Save and Exit" and confirm using the "set" button. The parameters set will be permanently saved. The unit automatically returns to operation mode.

Block diagram



Functionality test

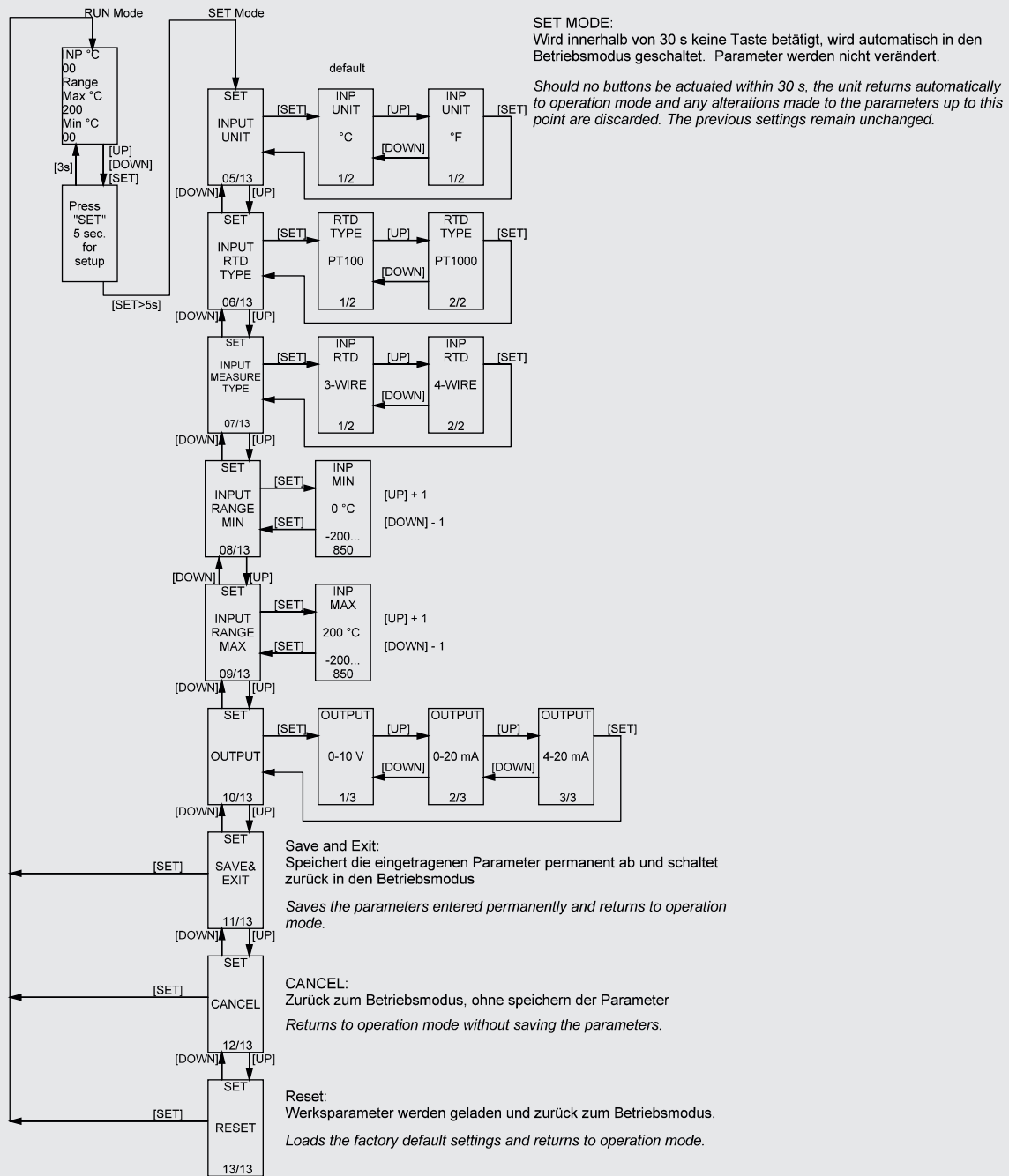
1. Connect temperature sensor or simulator at input (KL 1 to 4). In doing so, take heed of the 3-wire or 4-wire connection (in accordance with the software configuration).
2. Connect the auxiliary power supply (KL 9/10).
3. Set unit parameters (e.g. start of measurement range to 0 °C and end of measurement range to 100 °C) as described above via the menu.
4. Check the function of the analog outputs by slowly increasing or decreasing the input signal within the set limits.
5. Check the sensor monitoring system by disconnecting the sensor. (Red LED lights and the relay releases after approx. 3 to 4 seconds.)
6. Reconnect the sensor. Briefly actuate one of the buttons. The error message disappears after approx. 3 s.

Advice



Measured values are not recorded nor are switch outputs changed while the module is in "SET" mode. Should no further buttons be actuated within approx. 30 s, the unit returns automatically to operation mode and any alterations made to the parameters up to this point are discarded. The same occurs when the "SET" mode is exited using the menu point "cancel". The unit then operates with the last previously saved values. Exiting the "SET" mode via the menu point "Reset" restores the parameters to their factory default values.

Menu structure listing



Parameter			
Name	Function	Adjustment	Factory settings
Input range min	Input measurement min	-200...+850 °C -328...+1562 °F	0 °C
Input range max	Input measurement max	-200...+850 °C -328...+1562 °F	200 °C
Input unit	Temperature unit	°C / °F	°C
Input RTD type	Sensor type	Pt100 / Pt1000	Pt100
Input measure type	Connection type	3-Wire / 4-Wire	4-Wire
Output	Output type	0...10 V / 0/4...20 mA	0...10 V
Save & Exit	Save and exit		
Cancel	Exit without saving		
Reset	Load factory settings		

Reference note:



At temperatures above 50 °C the display contrast becomes much worse to the point of illegibility. This has no effect on the functioning of the unit. The display is not damaged by temperatures within the specified operating temperature range of the unit. The display will return to legibility once the temperature returns to below 50 °C.

Advice



- For installation and adjustment please pay attention to additional informations given in the data sheet enclosed with the device.

Conventional usage



- Not suitable for applications in explosive areas.
- Not suitable for applications in security-relevant equipments (SIL).

Transport / storage



- No outdoor storage
- Dry and dust free
- Not exposed to corrosive media
- Protected against solar radiation
- Avoiding mechanical shock and vibration
- Storage temperature -10...+55 °C
- Relative humidity maximum 95 %

Reshipment



- Use suitable transport packaging only to avoid damage of the equipment!

Standards and guidelines



- You have to comply with applicable regulations and directives.

Disposal



- Electrical devices should not be disposed of with household trash. They must be recycled in accordance with national laws and regulations.
- Take the device directly to a specialized recycling company and do not use municipal collection points.

Note on CE



- Applicable directives:
  - Electromagnetic Compatibility Directive 2014/30/EU
  - Low Voltage Directive 2014/35/EU
- Compliance with the applicable EU directives is identified by the CE label on the product.
- The operating company is responsible for complying with the guidelines applicable to the entire installation.

Order code

VMU-2

Temperature range

**0...200** (temperature range 0... 200 °C)

**special** (temperature range acc. to customer preference, please specify in plain text)

VMU-2 / **0...200**